



Path to Resilience in the Lake Pontchartrain Basin

Loss of Floodplain Function and Steps Forward

Healthy Gulf & Foundation for Louisiana
September 2019

Path to Resilience

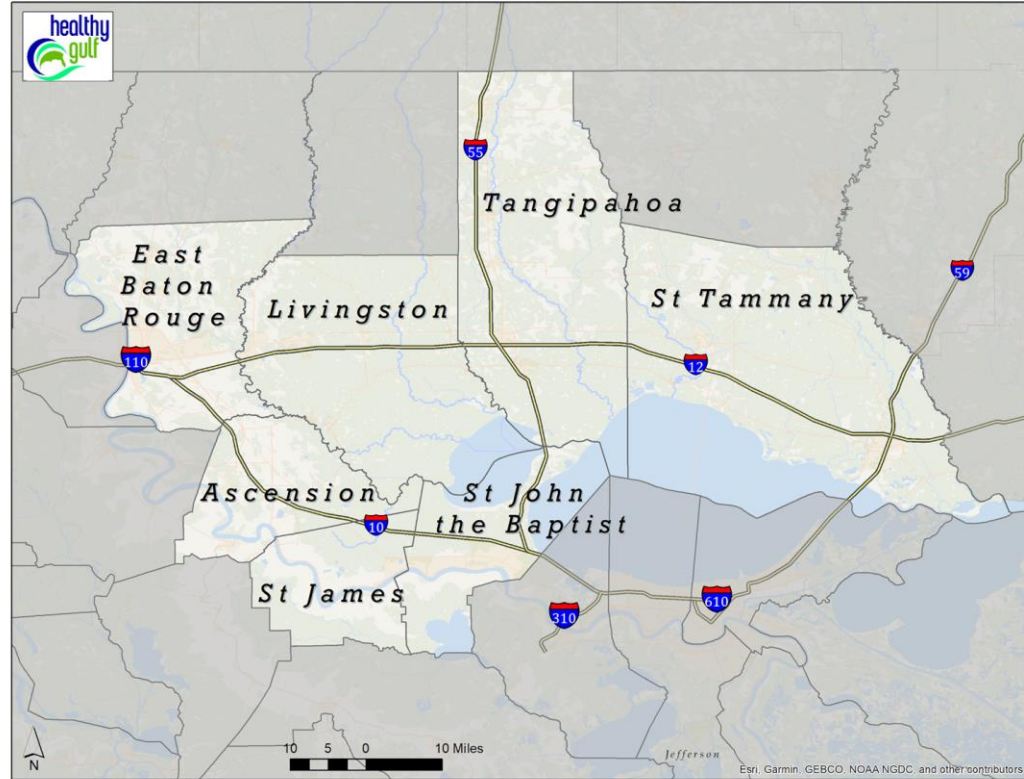
- Wetlands provide retention, resilience
- Complicated, many agencies involved

LOSS OF FLOODPLAINS

- **Wetland Fill**
- **Mines**
- ↑ **Responsible Construction, Coastal Management**
- ▲ **Drainage Problems**

PATH FORWARD

- Ask agencies for changes
- Continue to document regulations violations

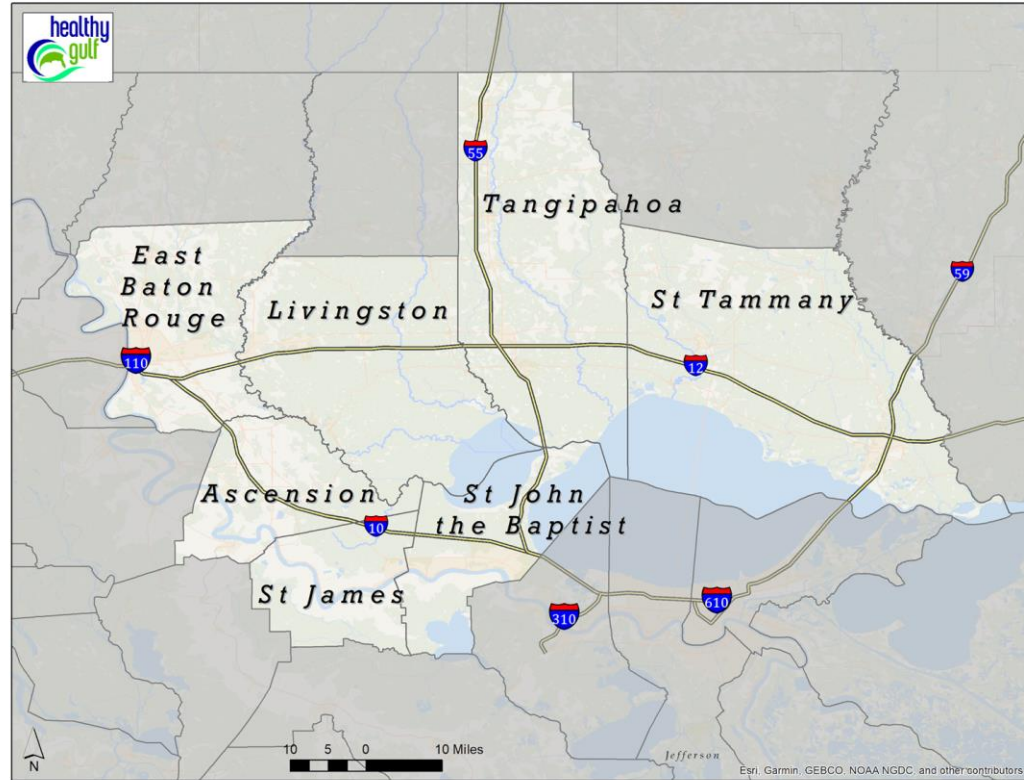


Pontchartrain Basin Flood Risk

CONTRIBUTING FACTORS

- Historically disturbed, unstable streams flow through the Florida Parishes
 - Bogue Chitto, Tangipahoa, Amite, Comite River
- Population increasing, but residential and commercial development along I-12 is increasing faster
- Hundreds of acres of wetlands are filled per year regionally, adding millions of gallons to the drainage burden
- There are growing risks to lower Basin areas from these upstream reductions in water storage

Ascension Parish, St. James Parish, St. John the Baptist Parish



Major Flooding Events

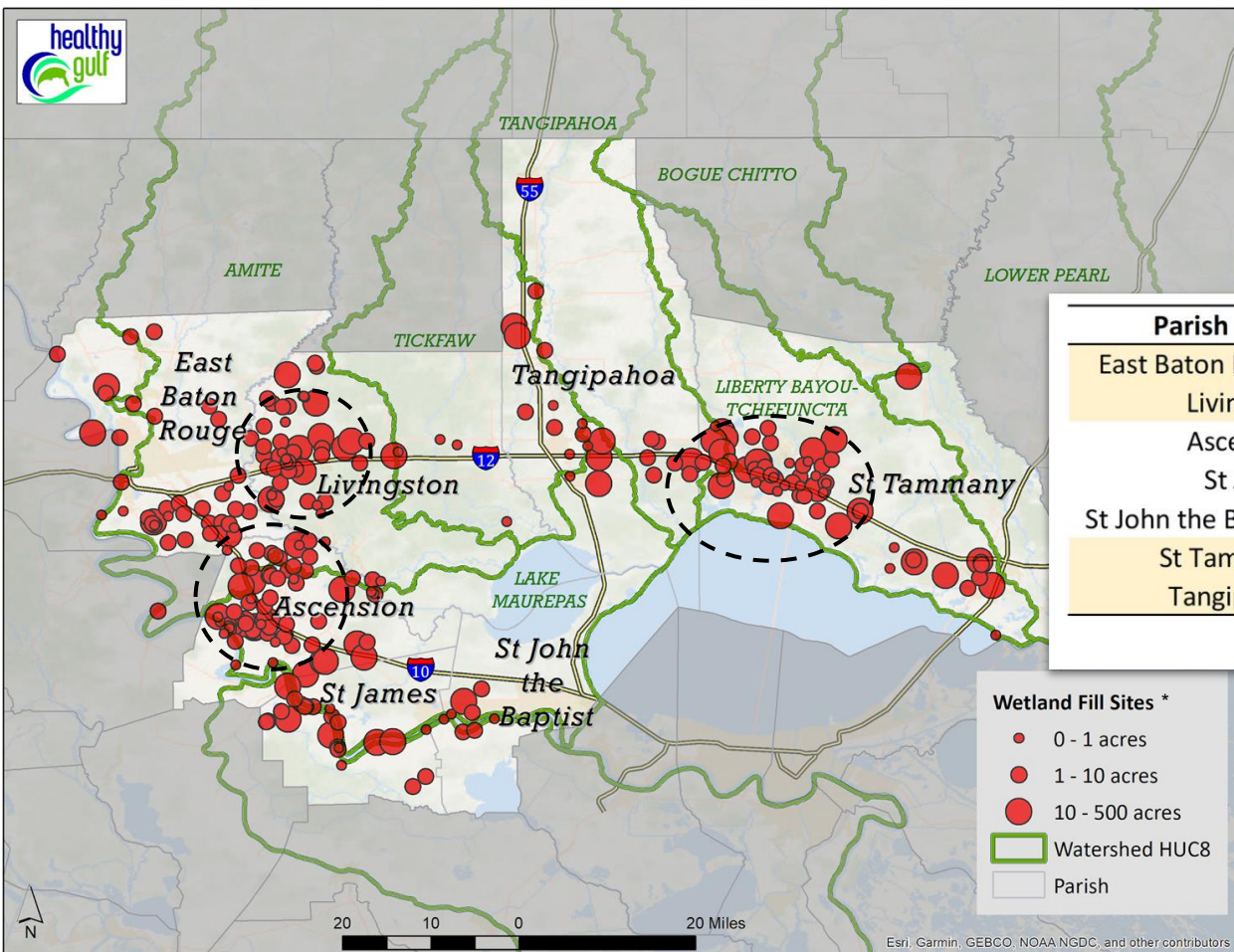
- Example of recent large and intense rainfall events
- Major flooding in these years
 - 1977, 1979, 1983, 2016
- \$10-15 Billion in damages in 2016
- This trend of continued catastrophic flooding is not sustainable



Aerials of flooding in Baton Rouge, La. following record-breaking rainfall and flooding August 14, 2016. (Photos by G. Andrew Boyd, NOLA.com | The Times-Picayune)

Wetland Fill Permit Overview

Parish	2014	2015	2016	2017	2018	Total
East Baton Rouge	14	24	37	48	70	} 1,215
Livingston	48	67	14	369	475	
Ascension	509	234	262	58	93	} 1,296
St James	1	191	40	47	121	
St John the Baptist	25	150	0	3	0	} 1,414
St Tammany	497	92	78	64	509	
Tangipahoa	5	61	54	28	20	
Total	1,099	819	485	617	1,288	



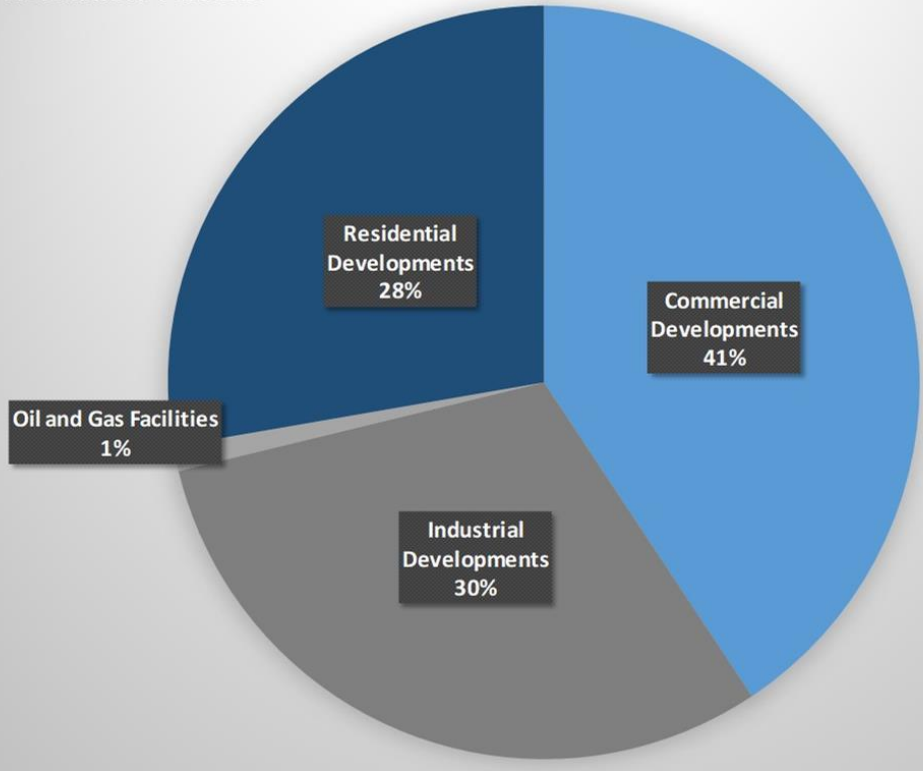
Wetland Fill Sites *

- 0 - 1 acres
- 1 - 10 acres
- 10 - 500 acres
- Watershed HUC8
- Parish

"Hotspots" of development

* all wetland fill data from records of Clean Water Act permit applications to the state and US Army Corps of Engineers

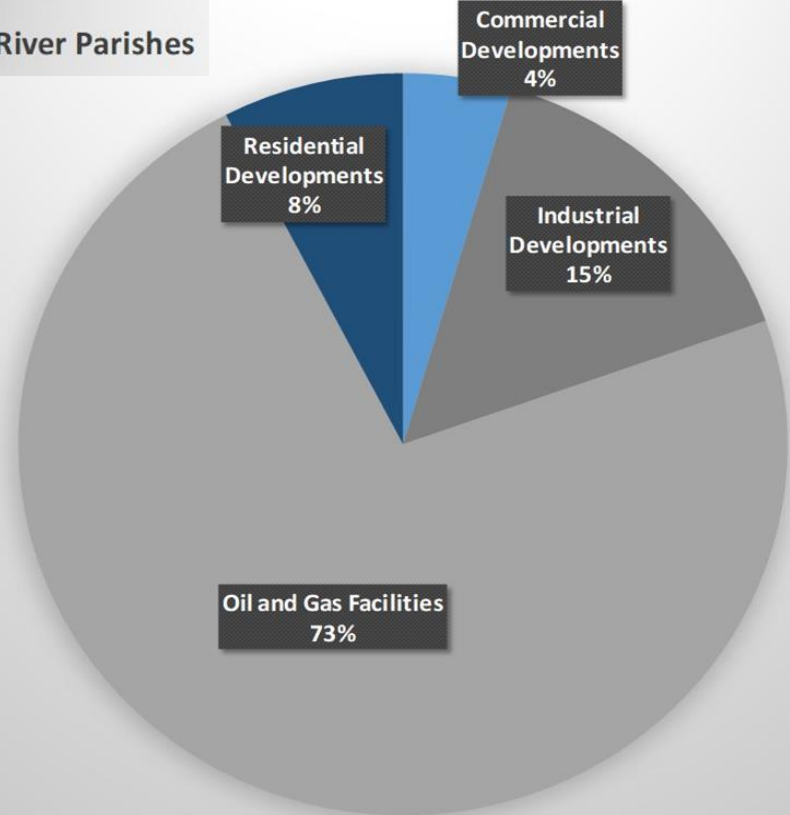
Northshore Parishes



Wetland Fill Permit Overview

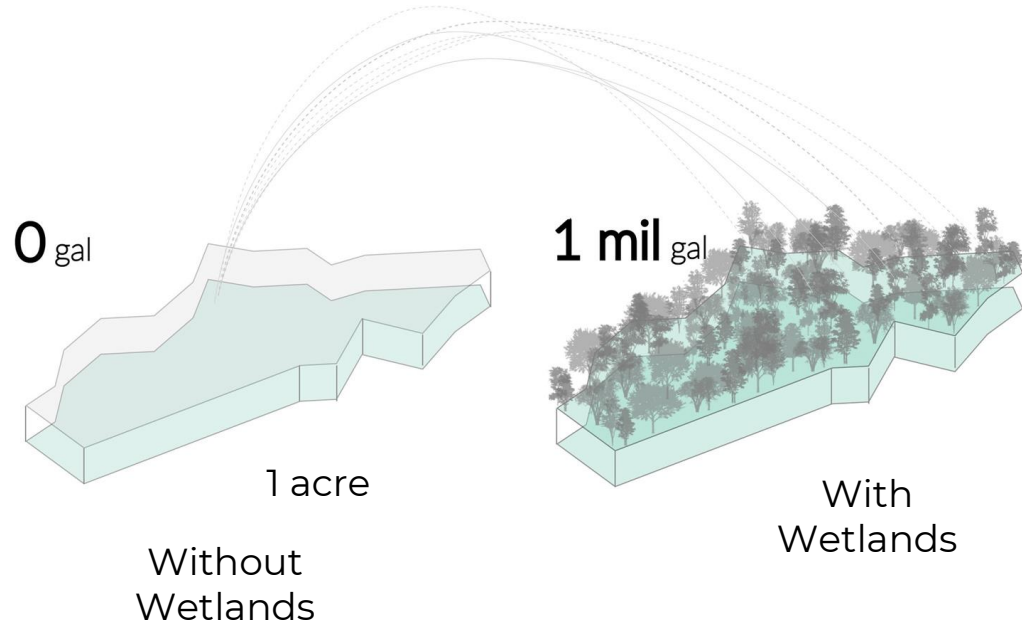


River Parishes



Drainage Plans in Pontchartrain Basin

- State agencies and northshore Parishes must continuously evaluate downstream impacts of development
 - Both the impacts within Parishes and impacts downstream
- 100+ acres of wetland fill per year adds a drainage burden of 100 million gallons of water to existing systems
- Each acre of wetlands filled = increasing flood risk for Lake Pontchartrain Basin communities
- Plans must be updated



St Tammany and Tangipahoa

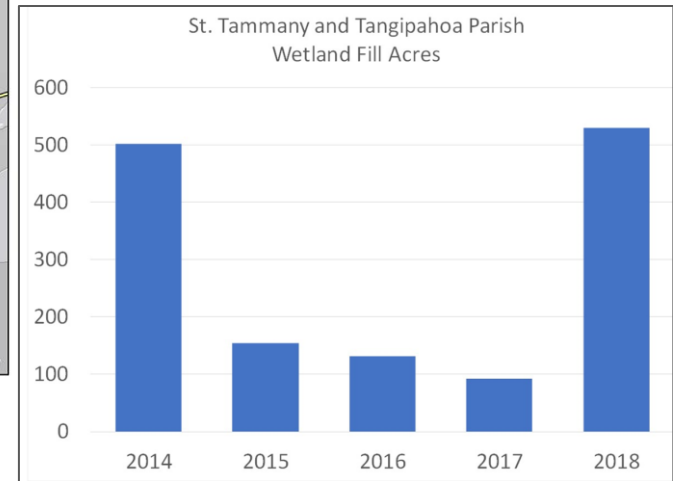
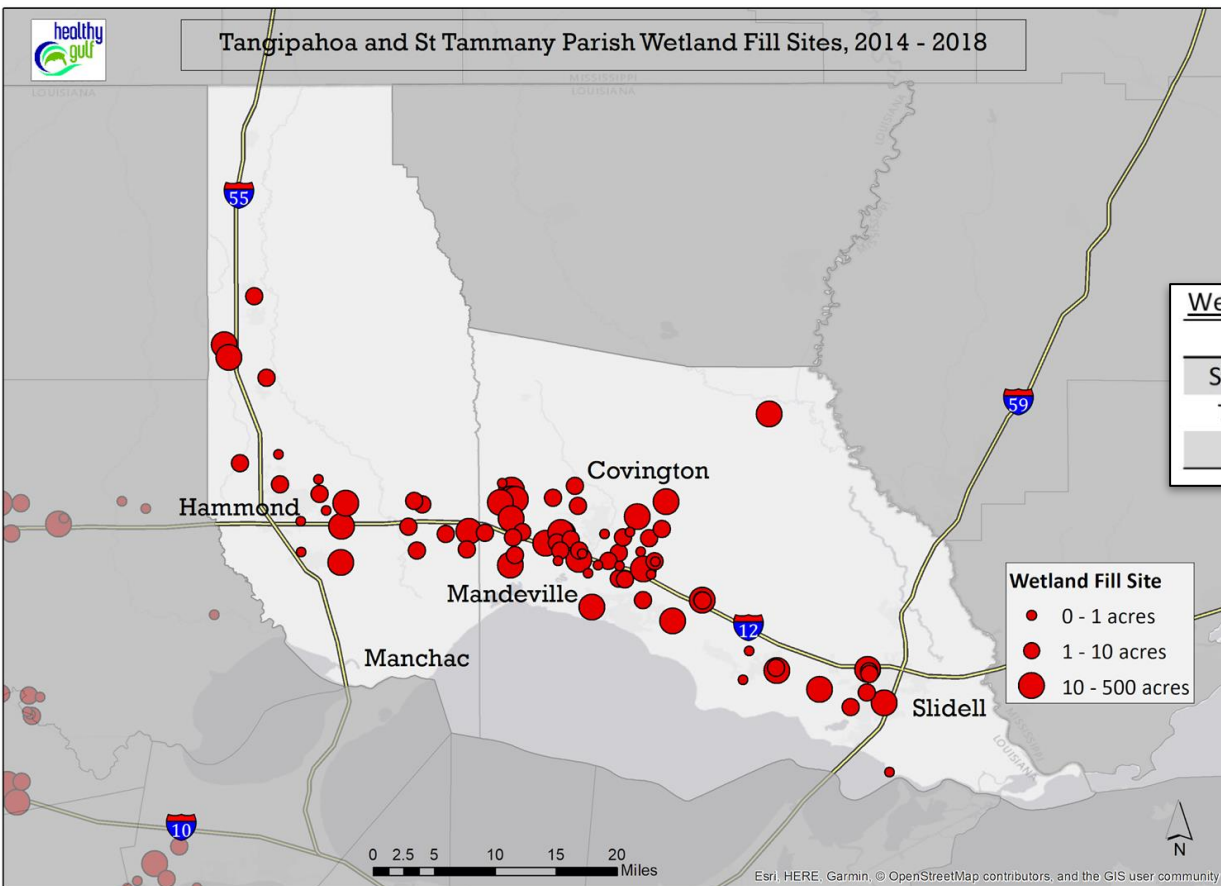
Florida Parishes

Wetland Fill

Tangipahoa Parish

St. Tammany Parish

Wetland Fill Acres						
Parish	2014	2015	2016	2017	2018	Total
St Tammany	497	92	78	64	509	1,246
Tangipahoa	5	61	54	28	20	168
Total	502	154	132	92	529	1,414



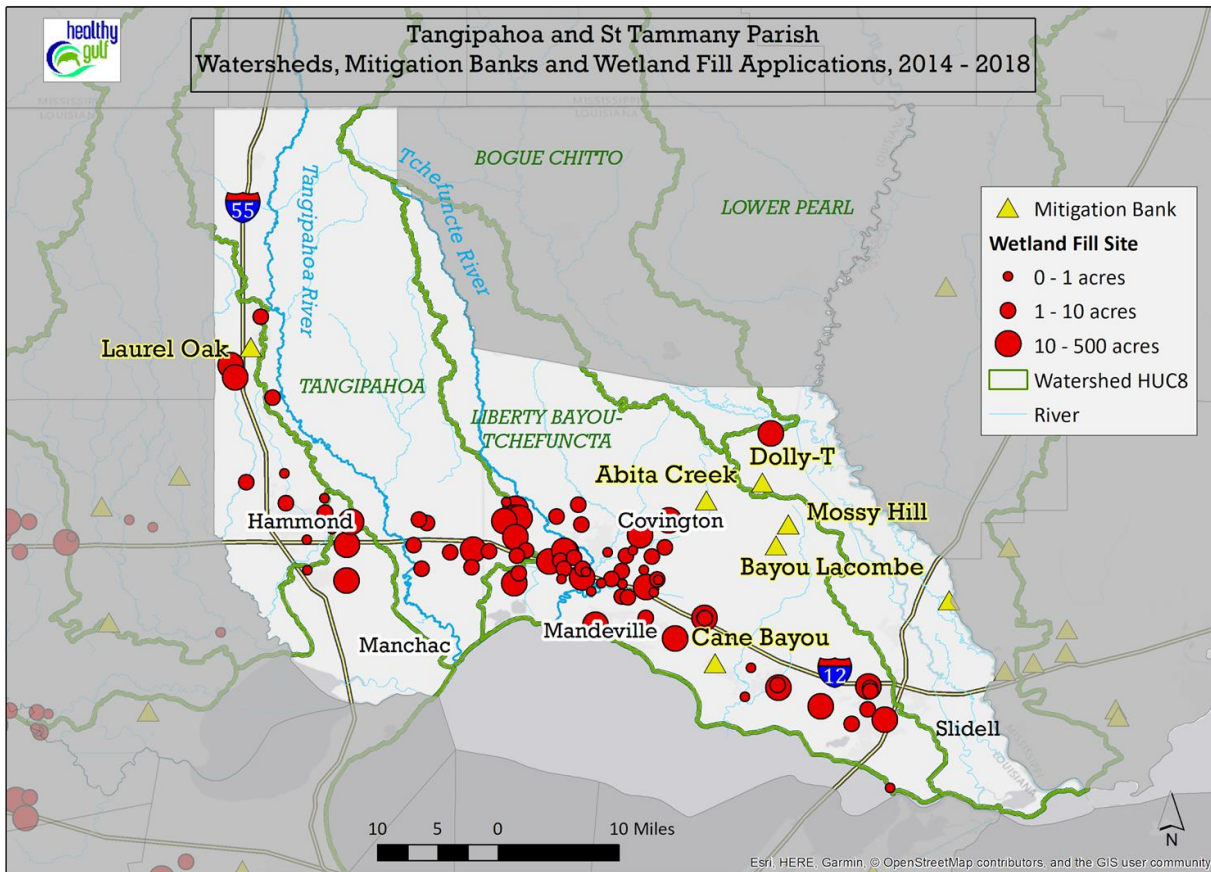
Wetland Mitigation Banks

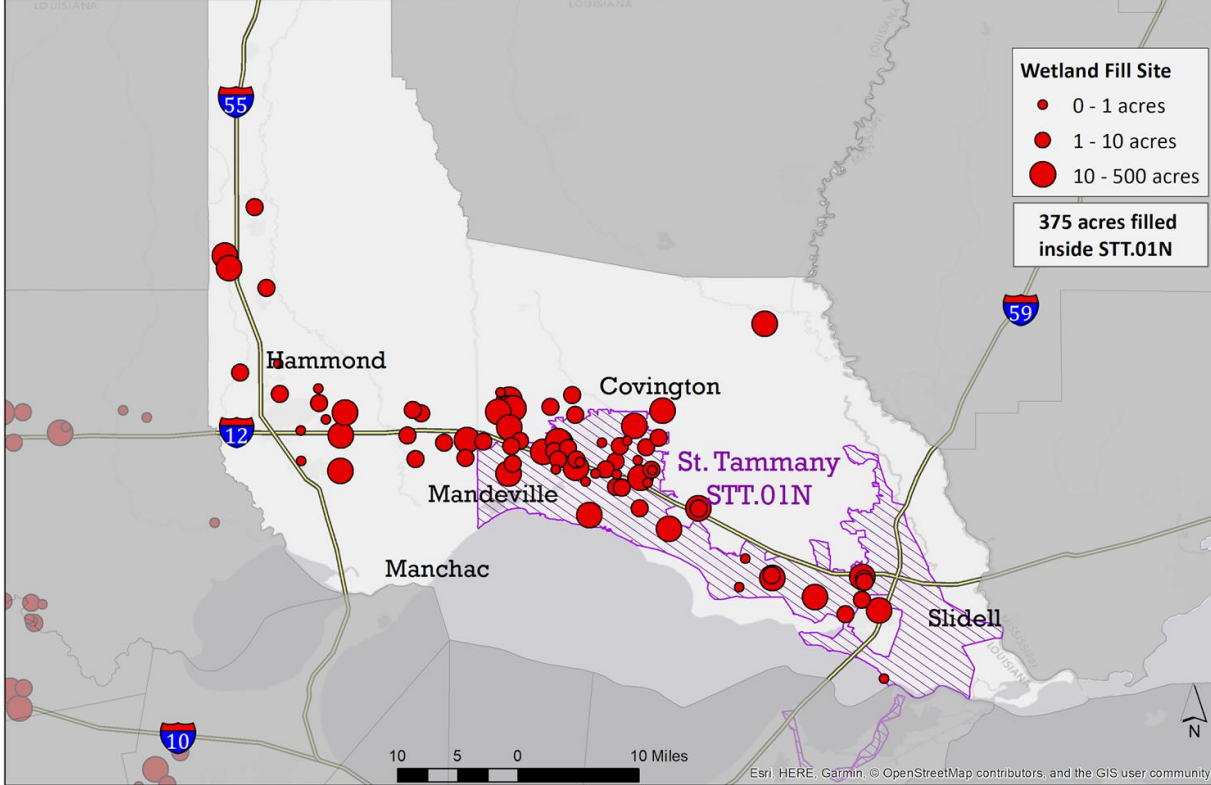
Army Corps (404) fill permits require **mitigation** = wetlands be restored or created somewhere else

- Applicants can buy credits from a Mitigation Bank instead

Credits are mostly in other basins

- None in Tangipahoa watershed
- Wetlands next to rivers not replaced





Coastal Master Plan Elevation Project

St. Tammany Parish

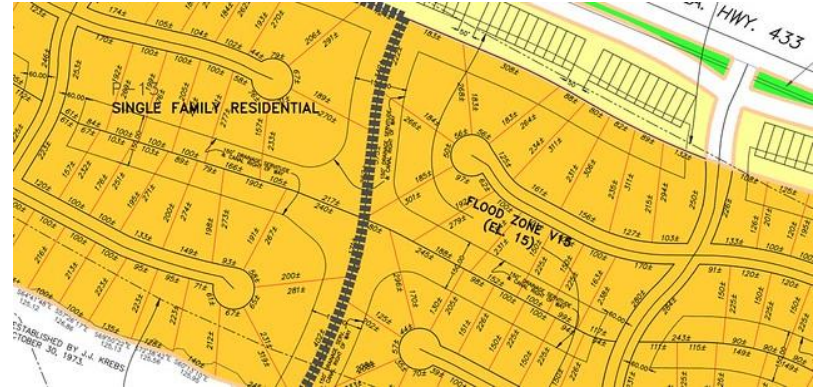
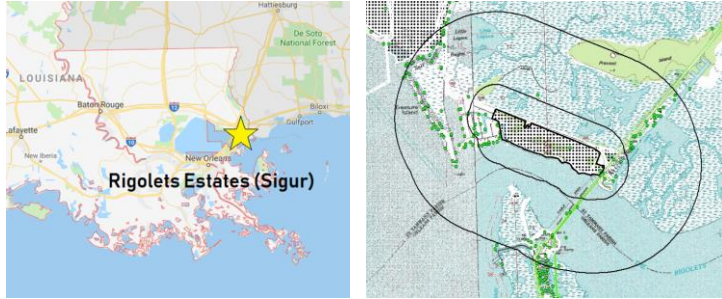
- Hotspot of development
- Non-structural project: STT.01N
- Slabs aren't helping! Each slab = more cost for STT.01N
- There is a dire need for elevating. This remains unfunded, unprioritized

State and Parishes must require elevating structures on piers in new residential development for public safety

Case Study

LDNR Office of Coastal Management has required pier construction to FEMA standards

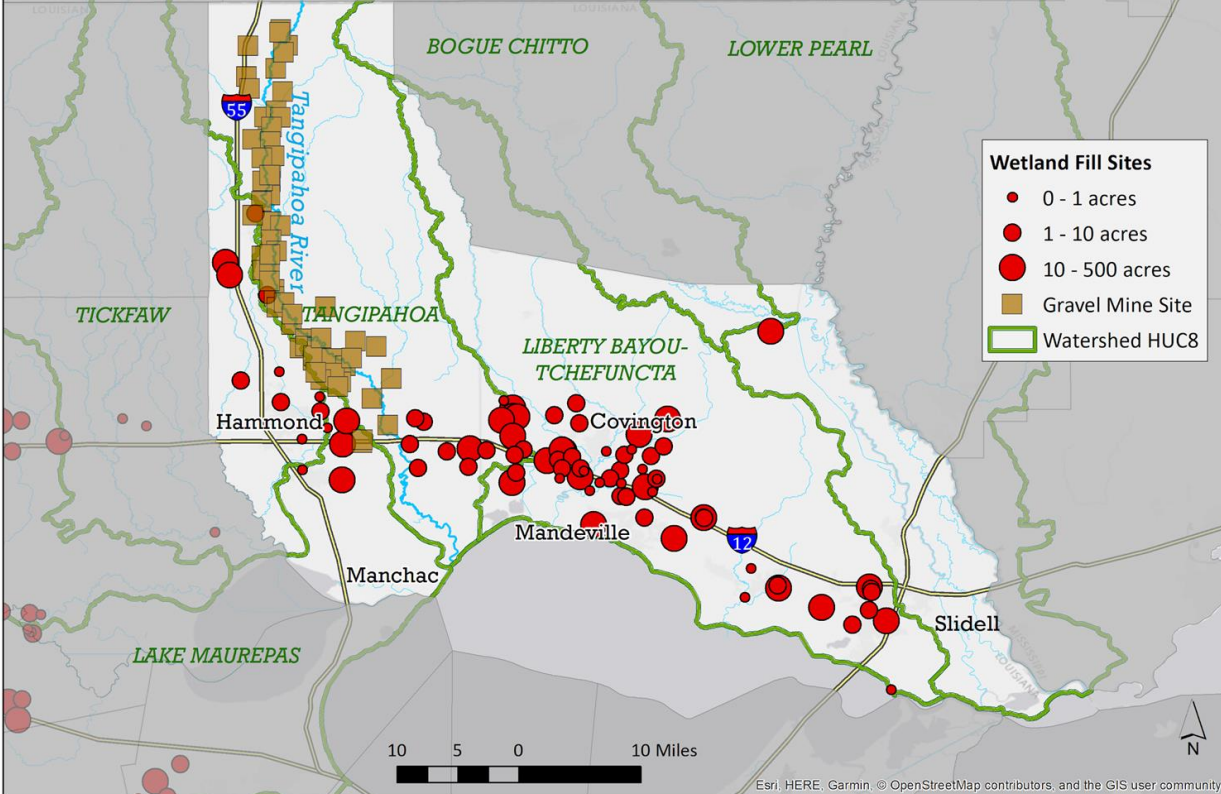
EXAMPLE: RIGOLETS ESTATES (SIGUR)



CUP 2017 1026 04/17/2019

"H Ground elevations will be graded to 7 feet MGL at building pad, from 6 feet MGL at street level, and 5 feet MGL at canals and to natural grade along Rigolets and all living structures will be raised on piers. **All first floor living quarters will be built according to FEMA approved elevations.**"

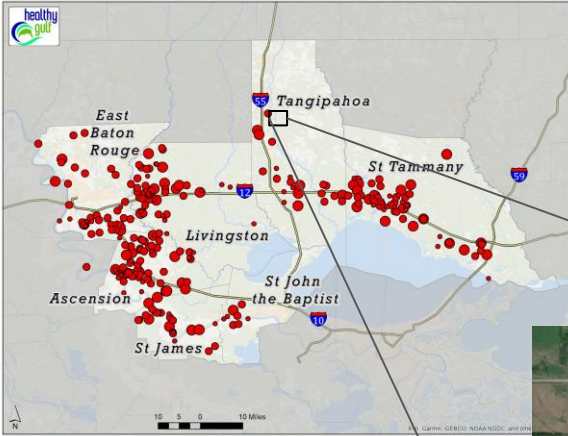
Tangipahoa and St Tammany Parish
 Mine Sites in Tangipahoa River and Wetland Fill Applications 2014 - 2018



Sand and Gravel Mines Tangipahoa Parish

- Mostly inactive mines
- State and Parishes need to consider the impacts from sand and gravel mines and their changes to river and floodplain functioning
- Restoration, recontouring, planting in old mines can repair floodplain function
 - Especially given there are no mitigation banks (Tangipahoa River)

Mine Reclamation Along the Tangipahoa River



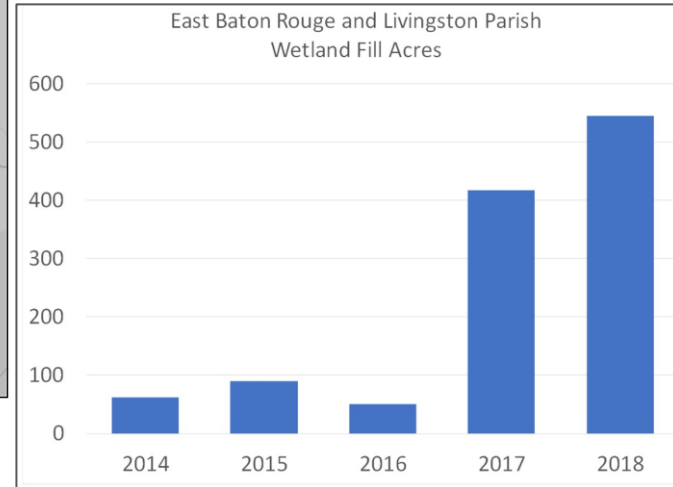
East Baton Rouge and Livingston

The Florida Parishes

Wetland Fill East Baton Rouge and Livingston Parish

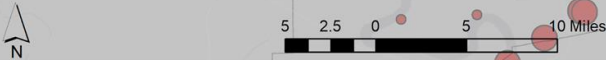
Wetland Fill Acres

Parish	2014	2015	2016	2017	2018	Total
East Baton Rouge	14	24	37	48	70	194
Livingston	48	67	14	369	475	1,021
Total	62	90	51	417	545	1,215



Wetland Fill Sites

- 0 - 1 acres
- 1 - 10 acres
- 10 - 500 acres

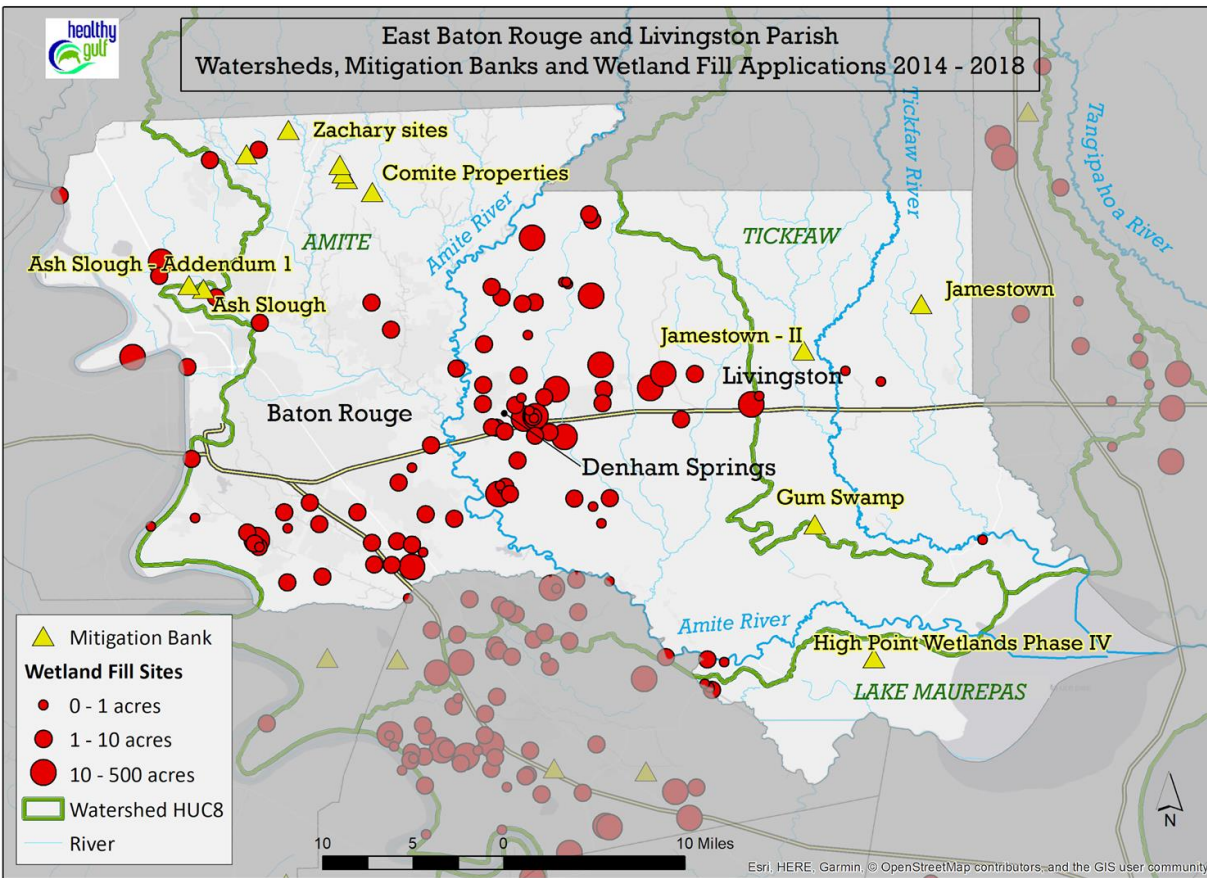


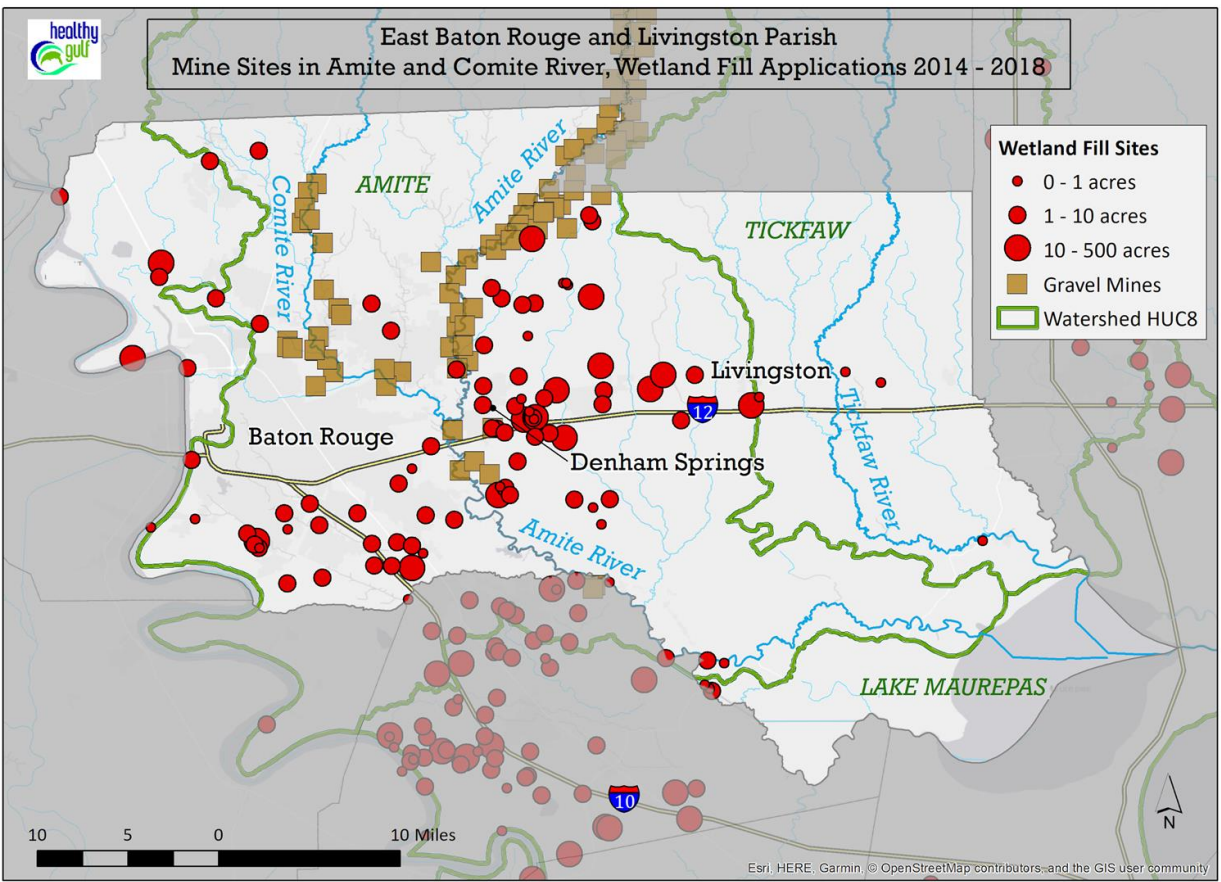
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Wetland Mitigation Banks

Few mitigation banks next to large rivers

- Wetlands next to rivers not replaced





Sand and Gravel Mines

- Many opportunities exist to stabilize river channels and restore floodplains affected by inactive sand and gravel operations in the Comite and Amite basins upstream of a large and growing population

Ascension, St James and St John the Baptist

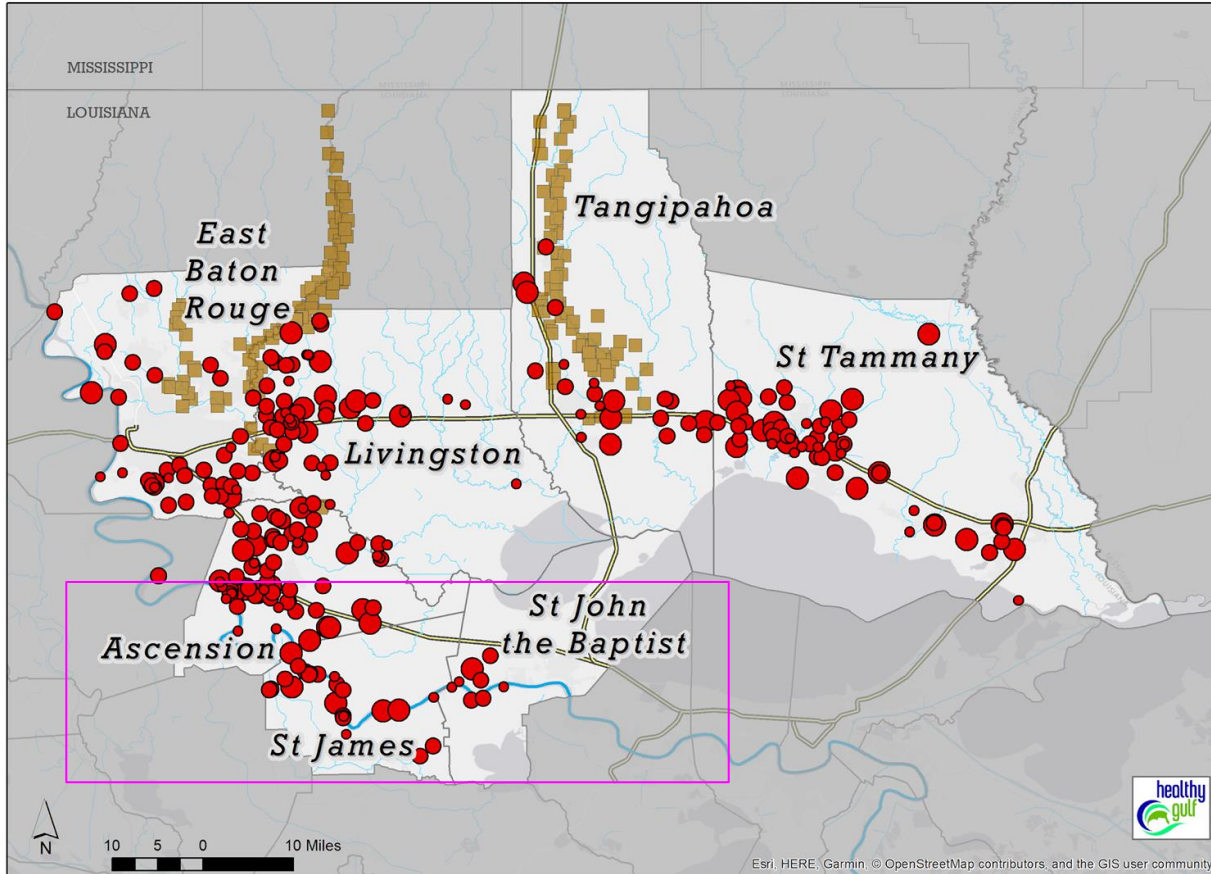
River Parishes

Sand and Gravel Mines

DOWNSTREAM EFFECTS

- EBR and Livingston Parishes drain into Lake Maurepas
 - Can cause backflooding for eastbank Ascension, St. John and St. James Parishes

- Southeast wind, seasonal, storm/ tidal effects work in combination with high water in Maurepas basin streams





Ascension, St James and St John the Baptist Parish
Wetland Fill Applications, 2014 - 2018



Wetland Fill

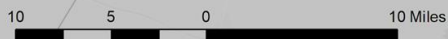
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Wetland Fill Acres

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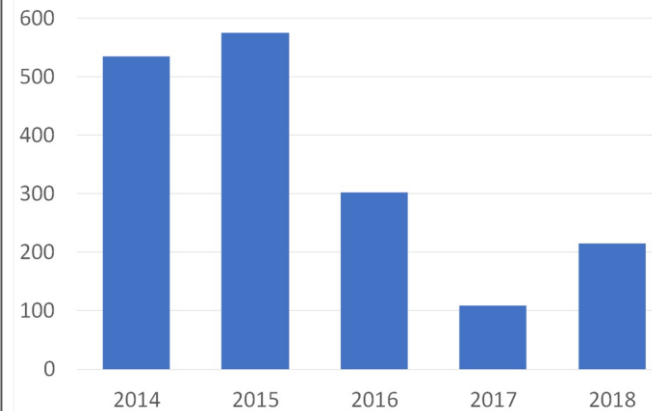
Wetland Fill Sites

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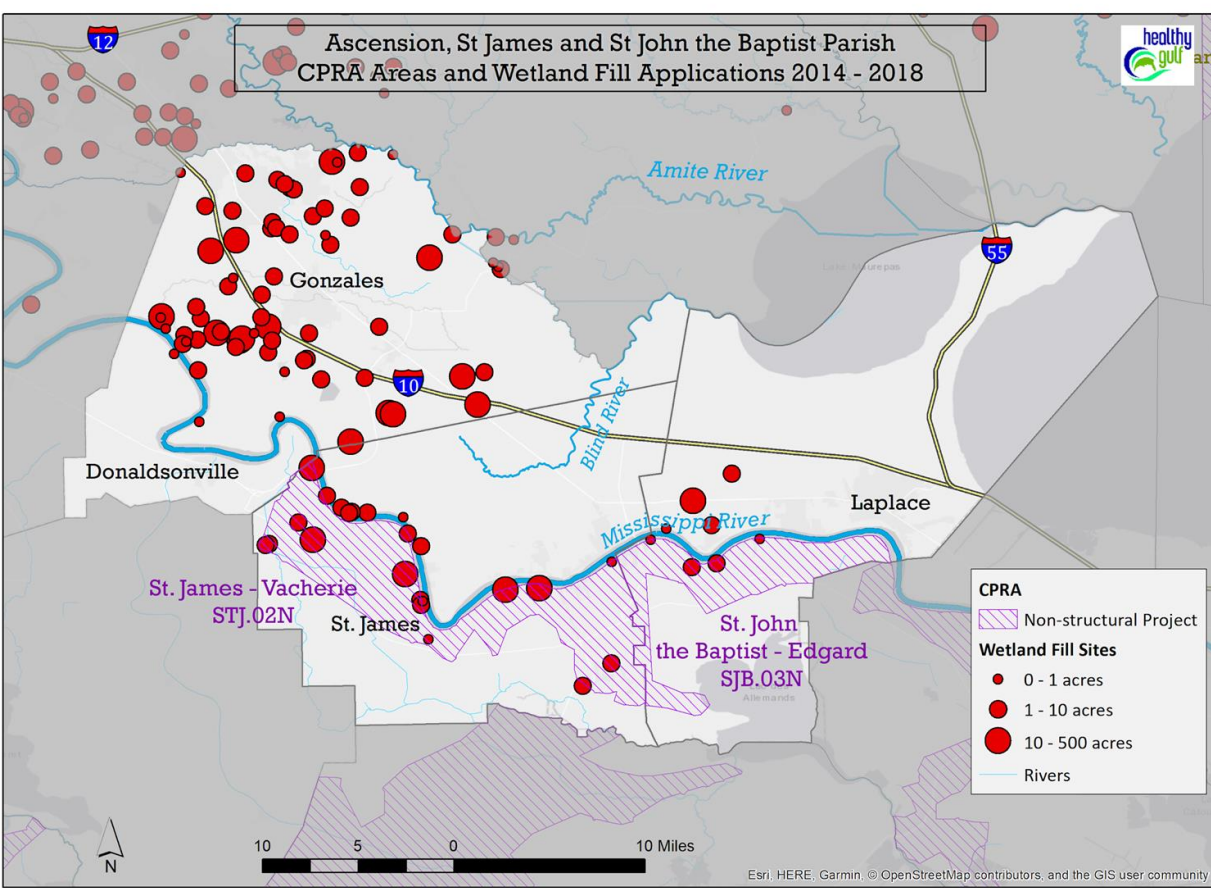


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Ascension, St. James and St. John the Baptist Parish
Wetland Fill Acres



Ascension, St James and St John the Baptist Parish
CPRA Areas and Wetland Fill Applications 2014 - 2018



Maurepas Backfill Flood Hazard

- These three Parishes are vulnerable to floods, and the CPRA non-structural project zones are on the **WRONG** side of the Mississippi River to be of much help with Maurepas back flooding from Amite basin runoff
- Vulnerable areas of these two Parishes are isolated at the bottom of the Amite/Maurepas basin

Conclusions

Wetlands = Resilience

MITIGATION

- Serve the drainage basin
- Riverine mitigation banks are needed to help prevent flooding

BUILD SMARTER

- Avoid building in wetlands
- New wetland fill permits: large projects be restricted to developers with FEMA elevation standard

RESTORATION

Restore sand and gravel mines in the Amite and Tangipahoa basins

- Protect all inhabitants of the Parishes including downstream ones



Mapping Your Wetlands

Hands-on Activity

Mapping Your Wetlands

Have there been wetlands filled or repeated or catastrophic flooding in any particular spots you can think of?

1. Locate the spot on a map
2. Write on a sticky note, what the problem was
 - a. Include the name of the location (roughly) and the date of an incident, if applicable
3. Place the sticky note with the arrow pointing to the spot where the problem occurred or occurs
4. Reconvene for a discussion

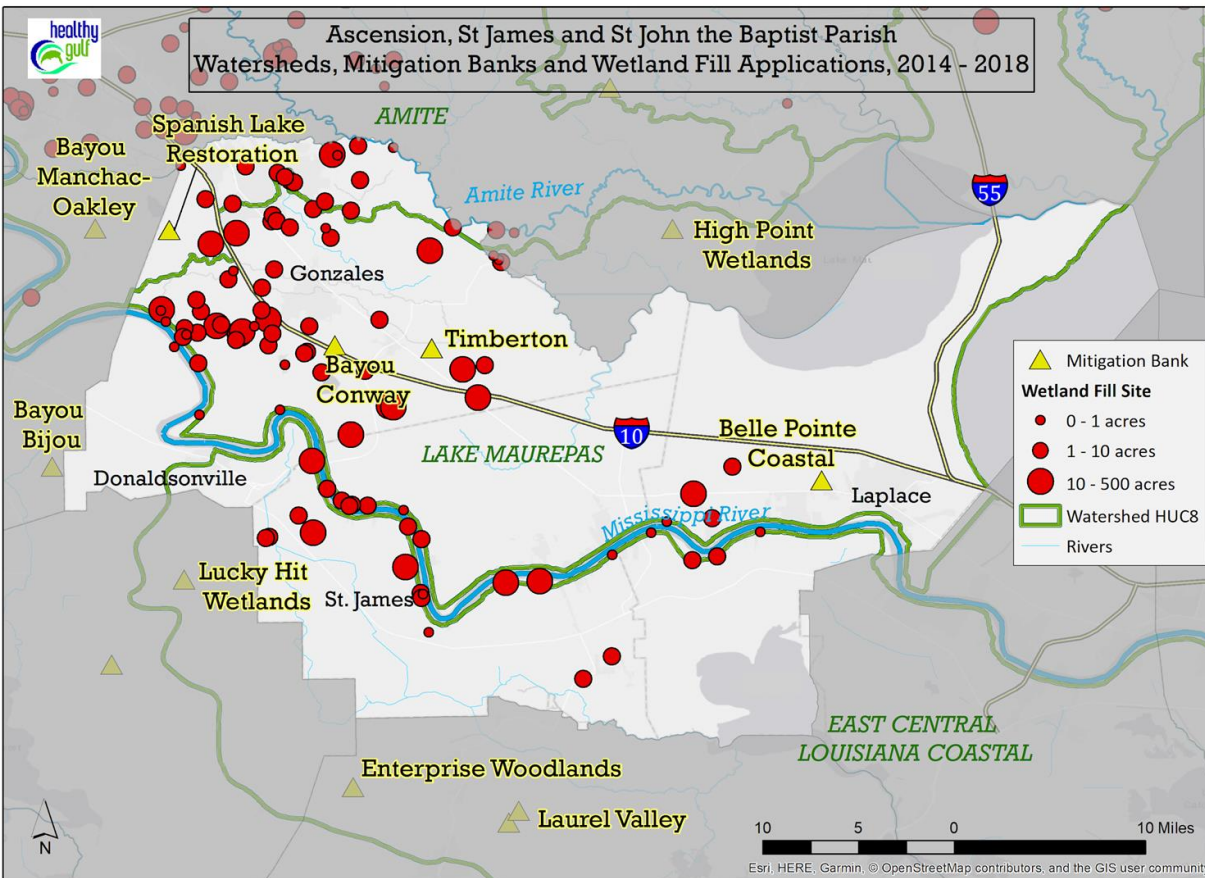


Ascension, St James and St John the Baptist Parish
Watersheds, Mitigation Banks and Wetland Fill Applications, 2014 - 2018

 **Wetland Fill**

Wetland Mitigation Banks

Ascension, St. James and St. John the Baptist Parish



Downstream Effects

- CPRA Non-structural areas are east and south of affected areas.
- River flooding comes from north and west
- These communities in St. James and St. John need help from their fellow parishes upriver

